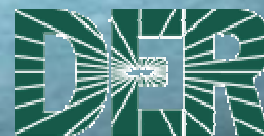




MicroCHP

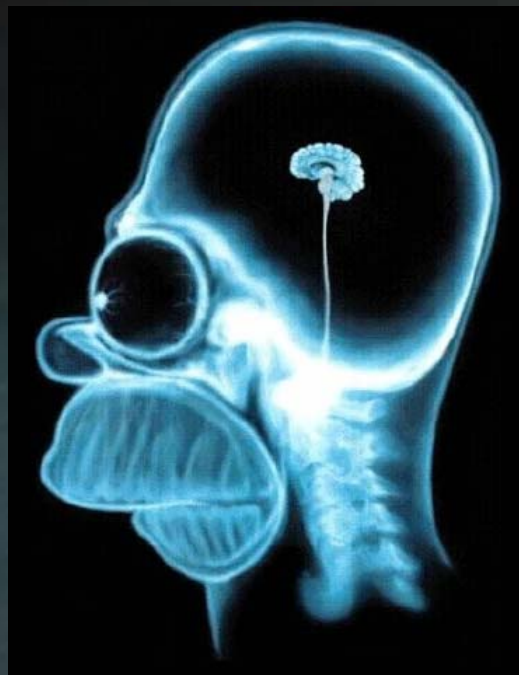
Technology Pathways Workshop
June 11-12, 2003

Ron Fiskum





In Case You Were Wondering?





Distributed Energy Resource Program

- The DER Program

Distributed Power Technologies

- Advanced Reciprocating Engines
- Next-Gen Gas Turbines
- Microturbines

Thermally Activated Technologies

- Absorption
- Desiccant Dehumidification
- Organic Rankine Cycles
- Advanced Heat / Mass Transfer

Integrated Cooling, Heating & Power Systems

- Equipment Integration
- System / Load Integration
- Grid Integration



MicroCHP Development

MicroCHP technology is being developed in Europe and elsewhere in reaction to Global Climate Change policymaking. American needs to be sensitive to the future potential for similar approaches, however, there are dramatically different economic, weather and regulatory environments to overcome.

CHP system

- WG800 in garage below kitchen boiler
- Balanced flue with condensate drain
- Extensive monitoring equipment
- Remote data logging
- Optimising control in house
- G59 protection



technology



MicroGen Overview

- Direct boiler replacement
- 1.1 kW electricity
- 5 to 36 kW heat output
- Savings of around £150 p.a.
- Around 1.5t CO₂ savings
- Pre-production prototypes
- Initial launch end 2003





European Policy

“In the future we can also expect to see far more “micro-CHP” – efficiency, small scale heating and electricity generation systems in homes as well as businesses”

Our Energy Future – Creating a Low Carbon Economy. Presented to Parliament by the UK Secretary of State for Trade and Industry, February, 2003.





American MicroCHP Opportunity

- Current economic, energy and environment policies present considerable challenges to microCHP
- Household load profiles drive demand to 15 kW_e in some large homes where at night the load plummets to 200 W_e
- American homes are largely forced air systems (excepting New England)






We Are Interested in Your Perspective

- The US DOE has been focusing on developing Integrated Cooling, Heating and Power systems for commercial and institutional buildings, college campuses, district energy systems and industrial plants.
- We are interested in understanding your viewpoint on the technical and economic potential of microCHP systems for America's homes of the future.





Look Forward to a Productive Workshop

- This workshop is a wonderful opportunity to create a strong pathway toward a future where microCHP systems become part of the portfolio of sustainable answers.
- Please be prepared to work hard, think smart and be candid.
- Thank you in advance for your efforts.

